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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/582,626  | 07/05/2000  | ANDREAS MAIER        | 00114               | 2631             |
| 23338   | 7590        | 09/12/2005           | EXAMINER            |                  |
| DENNISON, SCHULTZ, DOUGHERTY & MACDONALD<br>1727 KING STREET<br>SUITE 105<br>ALEXANDRIA, VA 22314 |             |                      | TSAI, HENRY         |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2183                |                  |

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/582,626             | MAIER ET AL.        |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Henry W.H. Tsai        | 2183                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-24,26,28,29,31-33 and 35-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-24,26,28,29,31-33 and 35-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the cutting insert is made of one piece" (in claim 41, lines 4-5) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the

Art Unit: 2183

filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

2. Claim 26 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Note claim 26 should not depend from the cancelled claim 25.

#### ***Claim Rejections - 35 USC § 112***

3. Claims 19-24, 26, 28, 29, 31-33, and 35-41 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the

Art Unit: 2183

relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Note in claim 41, lines 4-5, "the cutting insert is made of one piece" was not described in the specification. Further note, as shown in Fig. 18, cutting insert 250 is made of two pieces (the cutter 256 and the body comprising 252 and 254).

4. Claims 19-24, 26, 28, 29, 31-33, and 35-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 41, lines 4-5, it is not clear what is meant by "the cutting insert is made of one piece" since it was not described in the specification. As set forth above, cutting insert 250 is made of two pieces (the cutter 256 and the body comprising 252 and 254) as shown in Fig. 18.

Applicant is required to review the claims and correct all language which does not comply with 35 U.S.C. § 112, second paragraph.

Art Unit: 2183

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 42 is rejected under 35 U.S.C. 102(b) as being anticipated by Kieninger (USP 4,627,771) (Kieninger'771).

Referring to claim 42, Kieninger'771 also discloses, as claimed, a milling head having a body (1, see Fig. 2) and cutting inserts (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) wherein each cutting insert is adjustable in recesses (32, see Fig. 1) for clamping purpose, wherein the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) is positioned in a receiving part (32, see Fig. 1) in a positive-fitting manner (Note the positive-fitting manner occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2) and is fixed in its position by means of the clamping element (52, 53, see Figs. 2 and 9, and Col. 5, lines 52-62), characterised in that the clamping element is wedge shaped (the narrowed portion contact

Art Unit: 2183

the surface of insert 36, see Fig. 9) and is received in the recess (32, see Fig. 1) in a positive-fitting manner (as set forth, the positive-fitting manner occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2), wherein the cutting insert is provided with an inclination (on the surface of inert 36, see Figs. 4 and 9) on the side engaging with the clamping element, wherein the clamping element is provided with an inclination (on the narrowed portion contact the surface of insert 36, see Fig. 9) on the side engaging with the cutting insert.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2183

8. Claims 20, 23, 24, 26, 32, 35, 36, 39, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Kieninger (USP 4,964,763) (Kieninger'763).

Referring to claim 41, Kieninger'771 also discloses, as claimed, a milling head having a body (1, see Fig. 2) and cutting inserts (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) wherein each cutting insert is adjustable in recesses (32, see Fig. 1), a clamping element (52, 53, see Figs. 2 and 9, and Col. 5, lines 52-62) disposed in a recess (50, see Fig. 9) for clamping purpose, wherein the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) is positioned in a receiving part (32, see Fig. 1) in a positive-fitting manner (Note the positive-fitting manner occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2, to effectively prevent movements in any direction) and is fixed in its position by means of the clamping element (52, 53, see Figs. 2 and 9, and Col. 5, lines 52-62), characterised in that the clamping element is wedge shaped (the narrowed portion contact the surface of insert 36, see Fig. 9) and is received in the recess (50, see Fig. 9 and Col. 5, lines 59-60) in a positive-fitting manner (as set forth, the positive-fitting manner occurs especially when the cutting



Art Unit: 2183

insert is tightly clamped by the clamping elements 52, 53, see Figs. 2, to effectively prevent movements in any direction), and is angularly offset (90 degrees offset as viewed from the side see Fig. 9) with respect to the cutting insert receiving recess, wherein the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) is provided with an inclination (46, see Fig. 4) on the side engaging with the clamping element (note the element 49 as shown in Fig. 4 is best reasonably and broadly interpreted as a clamping element since it also contributes the clamping force applied to the cutting insert), wherein the clamping element (52 or 53 see Fig. 9) is provided with an inclination (the portion contacting the insert 36, see Fig. 9) on the side engaging with the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4).

Referring to claim 20, Kieninger'771 also discloses: the cutting insert can be adjusted by means of a wedge or screw (56, or 24, 25, see Fig. 2 and Col. 6, lines 62-68).

Referring to claim 23, Kieninger'771 also discloses: a receiving part (50, see Fig. 4) for the clamping element (52 or 53, see Fig. 4) is provided and the clamping element is disposed in a displaceable manner in said receiving part.

Art Unit: 2183

Referring to claim 24, Kieninger'771 also discloses: the receiving part (50, see Fig. 4) for the clamping element (52 or 53, see Fig. 4) crosses the receiving part (32, see Fig. 1) of the cutting insert (comprising 6, 4, and 36, see Fig. 4).

Referring to claim 26, Kieninger'771 also discloses: the inclination (46, see Fig. 4) being formed at an angle of about 10°.

Referring to claim 32, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36, see Fig. 4) comprises a turning plate (6, see Fig. 2) which is screwed to a carrier.

Referring to claim 35, Kieninger'771 also discloses: the inclination (46, see Fig. 4) is located on the long limb (36, see Fig. 4) .

Referring to claim 36, Kieninger'771 also discloses: the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) comprising a rotatable cutting plate carrier (11, see Fig. 2) which supports the cutter (6, see Fig. 2).

Referring to claim 39, Kieninger'771's adjusting element (such as any of elements 56, 24, and 25, see Fig. 2 and Col. 6, lines 62-68) is best reasonably and broadly interpreted as a conical screw since the front end thereof having a conical shape as shown in Fig. 2.

Art Unit: 2183

Kieninger'771 discloses the claimed invention except for: the cutting insert being made of one piece and a differential screw being provided for the purpose of adjusting the cutting insert.

Kieninger'771 also discloses: a screw (56, or 24, 25, see Fig. 2 and Col. 6, lines 62-68) is provided for the purpose of adjusting the cutting insert (comprising 6, 4, and 36, see Fig. 4). Further, using a differential screw for adjusting a cutting insert is old and well know in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise the cutting insert being made of one piece in order to reduce the manufacturing procedures by using less number of parts; and to modify Kieninger'771's device to comprise a differential screw being provided for the purpose of adjusting the cutting insert since it is just an alternative screw comparing with that used in the Kieninger'771's device. Further, as shown in re Larson 144 USPQ 347 (CCPA 1965), to make integral for different elements generally does not provide patentable weight to the claimed invention.

Art Unit: 2183

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Kieninger (USP 4,964,763) (Kieninger'763).

Kieninger'771 discloses the claimed invention except for: the cutting insert being positioned in an eccentric bushing which is mounted in a positive-fitting manner.

Kieninger'763 disclose a cutting tool comprising the cutting insert (8, see Fig. 2) being positioned in an eccentric bushing (17, see Fig. 4, and Col. 5, line 27) which is mounted in a positive-fitting manner.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise the cutting insert being positioned in an eccentric bushing which is mounted in a positive-fitting manner, as taught by Kieninger'763, in order to facilitate the radial adjustment for the Kieninger'771's cutter.

10. Claims 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771.

Kieninger'771 discloses the claimed invention except for: the angle of the inclination of the clamping element being smaller than the angle of the inclination of the cutting insert

Art Unit: 2183

(claim 28) and the difference in the inclination angles being about 2° (claim 29).

However, it is old and well known in the art to use the angle of the inclination of the clamping element is smaller than the angle of the inclination of the object to be clamped such as a cutting insert as claimed in order to facilitate inserting the clamping element thereinto.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise the angle of the inclination of the clamping element being smaller than the angle of the inclination of the cutting insert in order to facilitate inserting the clamping element; and the difference in the inclination angles being about 2° is just an alternate arrangement of the angles of the inclination of a clamping mechanism.

11. Claims 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Gupta (USP 5,934,842).

Kieninger'771 discloses the claimed invention except for: the cutting insert comprising a cutter which is soldered on to a carrier (claim 31); and the cutter and/or turning plate consists

Art Unit: 2183

of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film (claim 33).

Gupta disclose a milling cutter comprising the cutting insert (21, see Fig. 3) comprising a cutter (36, see Fig. 3, and Col. 4, lines 43-46) which is soldered on to a carrier (31, see Fig. 3); and the cutter and/or turning plate (36, see Fig. 3) consists of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film (37, see Fig. 3, and Col. 4, lines 43-46).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's machine to comprise the cutting insert comprising a cutter which is soldered on to a carrier; and the cutter and/or turning plate consists of hard metal, cermet, ceramic, CBN, polycrystalline natural and synthetic diamond as a thin and thick film, as taught by Gupta, in order to increase the securing strength between the cutter and the carrier of the Kieninger'771's tool, and to increase the cutting life of the Kieninger'771's cutter.

Art Unit: 2183

12. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kieninger'771 in view of Allemann (USP 4,929,131).

Kieninger'771 discloses the claimed invention except for: a cooling arrangement being provided in the basic body.

Allemann discloses a machine tool comprising a cooling (42, see Fig. 3, and Col. 3, lines 31-35) arrangement being provided in the basic body.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's tool to comprise a cooling arrangement being provided in the basic body, as taught by Allemann, in order to facilitate cooling the Kieninger'771's cutter for it's longer cutting life.

#### ***Allowable Subject Matter***

13. Claims 21, 22, 37 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Amendment***

14. Applicant's arguments filed 6/22/05 have been fully considered but they are not deemed to be persuasive.

Applicants argue that "this milling tool of '771 is not designed for use for high speed applications. That tool has large cutouts at the periphery (see column 1, first paragraph). Namely, the cutouts are disposed in the region of the outer periphery and are open to the front face of the base member 1. (page 11, lines 19-23). Examiner disagrees with Applicants. The high speed applications is the intended use for the Kieninger'771 tool. Besides, the high speed applications is not the claimed invention according to the language therein.

Applicants argue that '771 reference does not teach or suggest a cutting insert that is made of one piece (page 11, last line to page 12, first line). Examiner realizes the Kieninger'771's structure. However, as set forth above in the art rejection, It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kieninger'771's device to comprise the cutting insert being made of one piece in order to reduce the manufacturing procedures by using less number of parts; Further, as shown in re Larson 144 USPQ 347 (CCPA 1965), to make integral for different elements



Art Unit: 2183

generally does not provide patentable weight to the claimed invention.

Applicants also argue that "the supporting body 36 is not mounted in a positive fit. Two clamping members 52, 53 are provided for clamping supporting member 36, see Fig. 9. The clamping members 52, 53 are fastened together by a screw 51, see Fig. 9. They have a radius for engagement with the supporting body 36. The radius does not represent a form fit" (page 12, lines 4-9); and "Figure 6 shows the inclination from the open to the outside (wedge surface 64). This is clearly no positive fit, but rather a frictional fit (page 12, last line to page 13, first line). Examiner disagrees with Applicants. As set forth in the art rejection above, Kieninger'771 discloses cutting inserts (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) wherein each cutting insert is adjustable in recesses (32, see Fig. 1) for clamping purpose, wherein the cutting insert (comprising 6, 4, and 36 since they are integrated together as a cutting insert, see Fig. 4) is positioned in a receiving part (32, see Fig. 1) in a positive-fitting manner (Note the positive-fitting manner occurs especially when the cutting insert is tightly clamped by the clamping elements 52, 53, see Figs. 2) and is fixed in its position by means of the clamping element (52, 53, see Figs. 2

Art Unit: 2183

and 9, and Col. 5, lines 52-62). Therefore, The radius does represent a form fit.

Applicants also argue that "moreover, screw 49 is provided for adjustment lengthwise direction against the force of the spring stack 45. The screw is inclined with respect to the part 36 at angle of approximately 20 degrees. inwardly. Therefore the screw cannot be differential screw" (page 12, lines 15-19).

Examiner disagrees with Applicants. As set forth in the art rejection above, the element 49 as shown in Fig. 4 is best reasonably and broadly interpreted as a clamping element since it also contributes the clamping force applied to the cutting insert. Further, using a differential screw for adjusting a cutting insert is old and well know in the art.

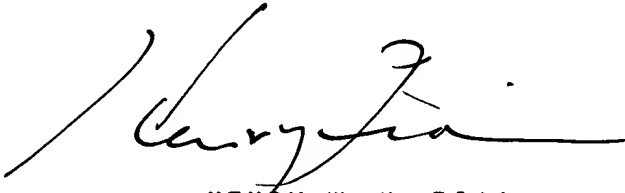
#### ***Contact Information***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (571) 272-4176. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (571) 272-4162. Any inquiry of a general nature or relating to the

Art Unit: 2183

status of this application or proceeding should be directed to the TC central telephone number, 571-272-2100.

16. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into the Group at fax number: 571-273-8300. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.



HENRY W. H. TSAI  
PRIMARY EXAMINER

September 4, 2005